



## **F. Course Content:**

### **Cycle I**

#### Basics of UNIX Commands

1. Write programs using the following system calls of UNIX operating system: fork, exec, getpid, exit, wait, close.
2. Write programs using the I/O System calls of UNIX operating system (open, read, write, etc).
3. Given the list of processes, their CPU burst times. Display/print the Gantt chart for FCFS scheduling algorithm. Compute and print the average waiting time and average turnaround time.
4. Given the list of processes, their CPU burst times and arrival times. Display the Gantt chart for SJF scheduling algorithm. Compute and print the average waiting time and average turnaround time.

### **Model Practical Examination I**

#### **Cycle II**

5. Given the list of processes, their CPU burst times and time quantum. Display the Gantt chart for Round robin scheduling algorithm. Compute and print the average waiting time and average turnaround time.
6. Given the list of processes, their CPU burst times and arrival times. Display the Gantt chart for Priority scheduling algorithm. Compute and print the average waiting time and average turnaround time.
7. Develop application using Inter-Process Communication (using shared memory, pipes or message queues).
8. Implement the Producer-Consumer problem using semaphores (using UNIX system calls)
9. Implement Memory management schemes like paging and segmentation.
10. Implement Memory allocation schemes like First fit, Best fit and Worst fit.

### **Model Practical Examination II**

## **G. Learning Resources:**

### **i. Reference Books:**

1. Universal Command Guide: For Operating Systems – April 15, 2002 ,by Guy Lotgering
2. The Easy Guide to Operating Systems, Larry Miller,2012.